

REMARKS

Claims 1, 2, 4-10, and 13-21 are pending. Claims 1, 5-7, 10, and 13 have been amended. Claims 17-21 are new. Support for amended Claims 1, 5-7, 10, and 13 is found in the published application, for example, at Paragraphs [0065]-[0067]. Support for new Claims 17 and 18 is found in the published application, for example, at Paragraph [0034]. Support for new Claim 19 is found in the published application, for example, at Paragraph [0040]. Support for new Claim 20 is found in the published application, for example, at Paragraph [0067]. No new matter has been added.

Claim rejections under 35 U.S.C. § 103a

Claims 1, 2, 4-10, and 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okamoto II (US Patent No. 7,014,921) in view of Ohbe et al (US Patent No. 6,296,930) or JP 07-304936 (JP '936) or Furuta et al '004.

The Office Action alleges that Okamoto II teaches a metal-coated resin molded article comprising a film or substrate of liquid-crystalline polyester resin composition and a metal layer formed on said film wherein the metal layer may be formed by a physical vapor deposition method and subjected to corona discharge treatment. The Office Action further alleges that Okamoto II teaches that the liquid-crystalline polyester resin composition can further comprise another resin other than the liquid-crystalline polyester such as an epoxy-group containing ethylene copolymer. The Office Action states that Okamoto II does not specifically teach the amount of copolymer as instantly claimed. Nevertheless, the Office Action relies on Ohbe and Furuta to allegedly teach that the incorporation of a glycidyl methacrylate/ethylene copolymer in amounts as instantly claimed provides improvements in the liquid crystalline polyester resin composition. Applicants respectfully traverse.

As amended, Claim 1 recites a metal-coated resin molded article comprising a substrate made of a molded article and a metal layer formed on said substrate, wherein said molded article comprises a reaction product obtained by reacting a liquid-crystalline polyester and an epoxy-group containing ethylene copolymer. Nothing in Okamoto II, Furata or Ohbe teach or suggest such a molded article substrate.

As demonstrated by the examples, the liquid-crystalline polyester is effectively reacted with the epoxy-group containing ethylene copolymer. As such, tear resistance of the surface portion of the resin substance can be remarkably improved. See [0075]. As such, one of ordinary skill in the art would have had no reasonable expectation of success in combining the cited references to prevent deteriorations in toughness and strength of the surface portion of the resin substance as achieved by the instant claims.

With regard to Claim 10, as amended, Claim 10 now recites an additional thermal treatment step on the molded article substrate. Nothing in Furuta et al (USPN 6,124,004), Okamoto et al (USPN 7,014,921), and Ohbe et al (USPN 6,296,930) or JP 07-304936 teaches or suggests this additional thermal treatment. Again, one of ordinary skill in the art would have had no reason to modify the cited references to include an additional thermal treatment of the molded article substrate.

Specifically, the additional thermal treatment further improves the adhesion of the metal layer and reduces the thermal expansion coefficient of the resin substrate. In addition, the additional thermal treatment is effective to reduce the dielectric loss tangent of the resin substrate. Consequently, the metal coated resin molded article of the present invention may be used as a molded circuit board having excellent RF properties. See [0067]. Accordingly, one of ordinary skill in the art would have had no reasonable expectation of success in combining the cited references to prevent deteriorations in toughness and strength of the surface portion of the resin substance as achieved by the instant claims.

Finally, with regard to the new claims, Claims 17 and 18 describe specific imidazole compounds ([0034]). Applicants note that 1-methylimidazole as disclosed in Okamoto II and 2-ethyl-4-methylimidazole as disclosed in Furuta are not included in these claims. As such, one of ordinary skill in the art would have had no motivation to modify the imidazoles disclosed in Okamoto II or Furuta to those of the instant claims. Claim 19 describes specific catalysts ([0040]). Germanium oxide, stannous acetate, and titanium dioxide, as disclosed by Ohbe; and sodium acetate and potassium acetate as disclosed by Okamoto II are not included in these claims. Again, one of ordinary skill in the art would have had no motivation to modify the catalysts disclosed in Okamoto II or Ohbe to those of the instant claims. Claims 20 and 21 are characterized by the resin

molded article being subjected to thermal treatment under an inert-gas atmosphere. Applicants note that in Ohbe, only the powder is heat treated. This dramatically differs from the subject matter of the claims 20 and 21. Thus, one of ordinary skill in the art would have had no motivation to modify the heat treatment step of Ohbe to that of the instant claims.

CONCLUSION

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Applicants believe that no additional fees, other than the fee for the two-month extension of time, are required in connection with this paper. Nevertheless, Applicant authorizes the Director to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to Deposit Account No. 04-1105, under Order No. 80079(302721).

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Respectfully submitted,

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